Georgia Tech

Georgia Institute of Technology: Defining the technological research university of the 21st century

Higher Education Appropriations Subcommittee
Georgia House of Representatives
February 2008

Students

17,933 students enrolled:

- 12,357 under-graduates*
- 5,576 graduate students

- Growing enrollment: added 4,150 students in the past 10 years.

* Including Robert Smith, Architecture

A national leader in graduating minority and female engineers

Access for talented students

- Low tuition compared to national peers.
- Co-op Program: 2,700 students work their way through Tech, gaining valuable job experience.
- *Diverse Issues in Higher Education* and *Hispanic Business* rank Tech among the best in the nation in graduating minority engineers.
- Tech Promise for economically disadvantaged Georgia students:
  - 400 students from families with income less than $30,000
  - Program dependent upon private gifts
  - Will help in recruiting from South Georgia, inner cities

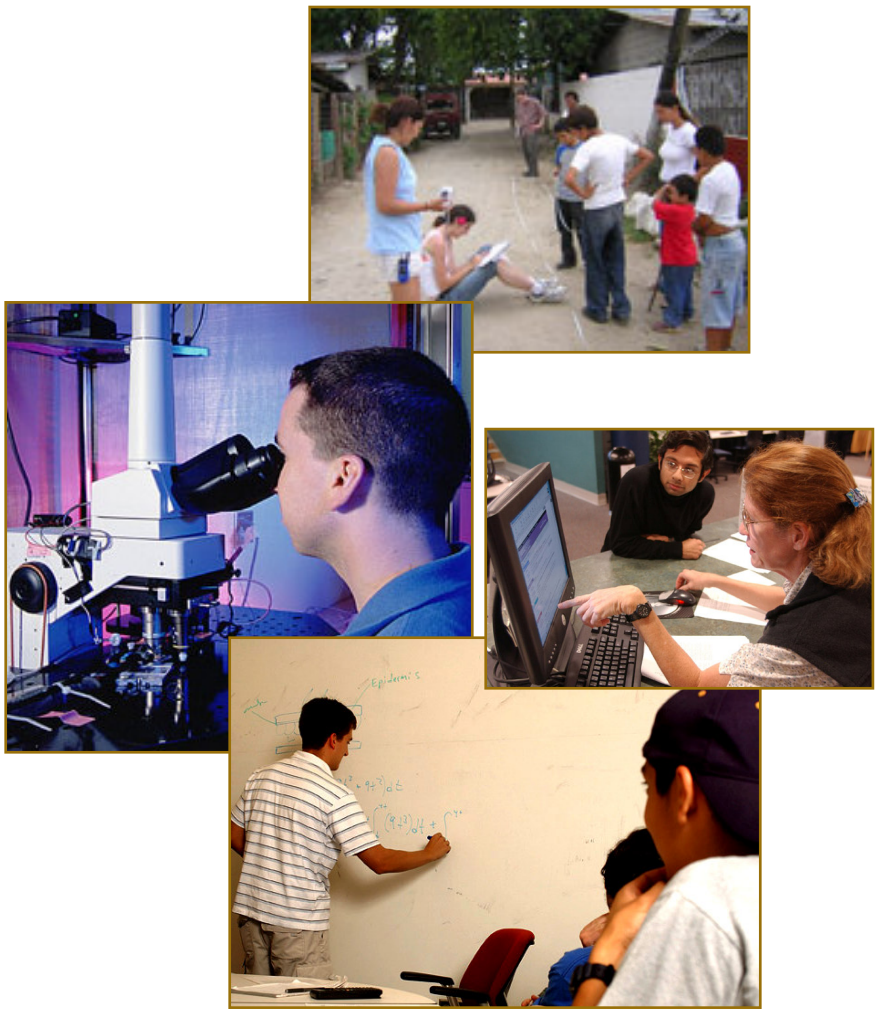
Access to engineering education

- Largest engineering program in the nation
- Regents Engineering Transfer Program: 235 juniors and seniors from RETP enrolled
- Georgia Tech Savannah: 550+ students including our partner institutions:
  - Savannah State University
  - Armstrong Atlantic University
  - Georgia Southern University
- Distance learning: 485 students

Georgia Tech Savannah

Reshaping undergraduate education

- Honors Program
- New interdisciplinary degrees
- International Plan
- Research Option
- Leadership education
- Revising the curriculum
  - Problem-based learning
  - “Threads”



Improving our performance

- First year retention, 2006: 92% (up from 85% in 1994)
- Graduation rate, 2006: 77% (up from 69% in 1994)
- Study abroad quadrupled since 1994 to 34% of undergraduates
- 43% of undergraduates engage in structured research
- Awarded more PhD degrees since 1996 than in all of Tech's 108 years prior to 1996

Improving the System's performance

- System's 3 goals:
  - Increase access
  - Improve retention
  - Improve graduation rates by 1% each year, bring individual units to national average by 2010

A quality campus

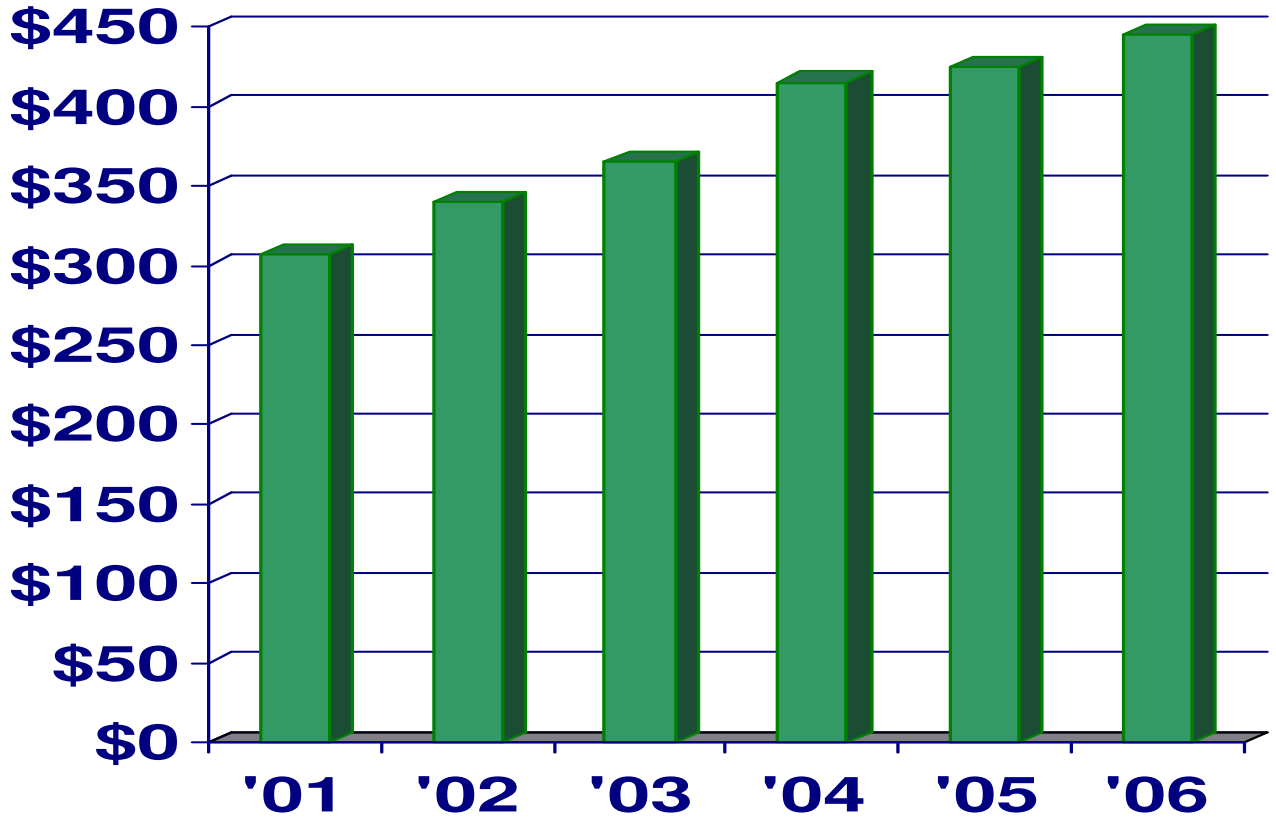
7 million gross sq ft of new/renovated space since 1995; 20% from state funds

Marcus Nanotechnology Building

- Largest in the South
- Three classes of cleanrooms (10, 100, 1,000)
- First in nation, world designed for both physical, biomedical research
- Flexible configuration
- Multi-user access
- Funding:
  - State: $45 M
  - Ga Tech: $45 M
  - Equipment: $50 M

Annual research expenditures

(in millions)



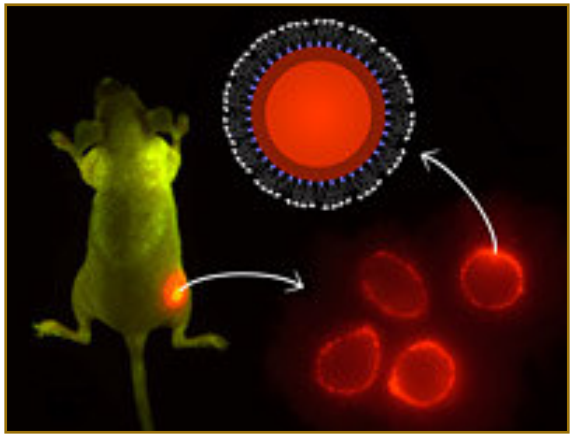
1,884 awards

2,317 awards

At the leading edge

- Research expenditures doubled during past decade
- 18 National Centers of Excellence
- No. 2 nationally in engineering R&D
- No. 3 nationally in nanotechnology experts cited in peer-reviewed publications
- Attracted Jeff Skolnick, world-renowned computational biologist, and team of 19 to Institute for Systems Biology

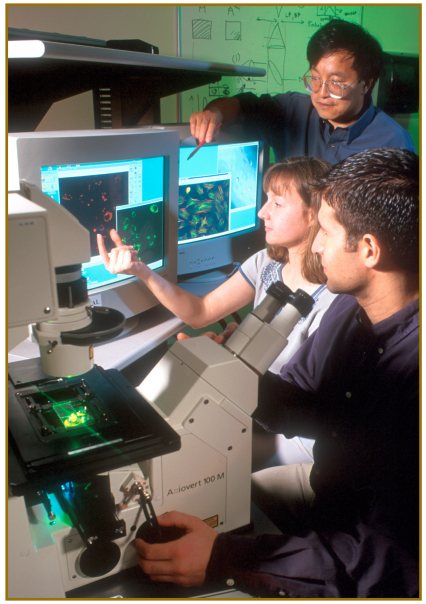
Identifying and attacking individual cancer cells.



"The Razor" at the Institute for Systems Biology is the world's 41st fastest computer.

Expanding medical research

3 NIH national centers of excellence in nanomedicine; Emory, MCG are partners:



Cardiovascular disease

Cancer diagnosis, treatment

DNA, RNA repair

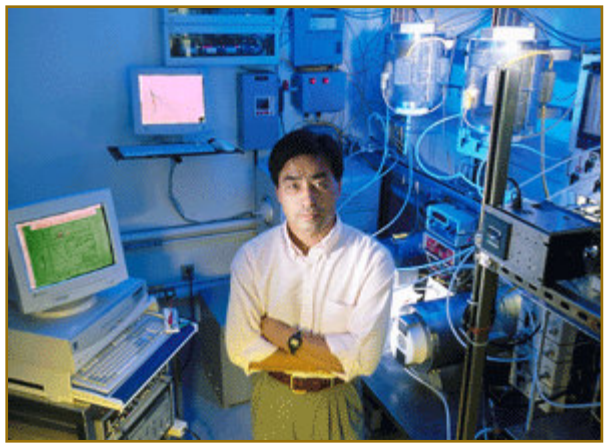
Center for Pediatric Outcomes and Quality, joint with Children's Health Care of Atlanta

Electronic health systems

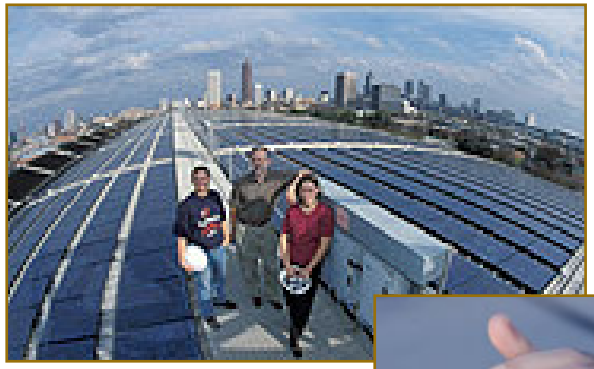
Joint center with Shepherd Center: wireless technologies for disabilities.

Energy

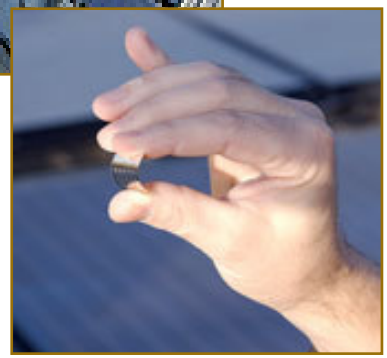
Softwood to Ethanol: UGA is a partner

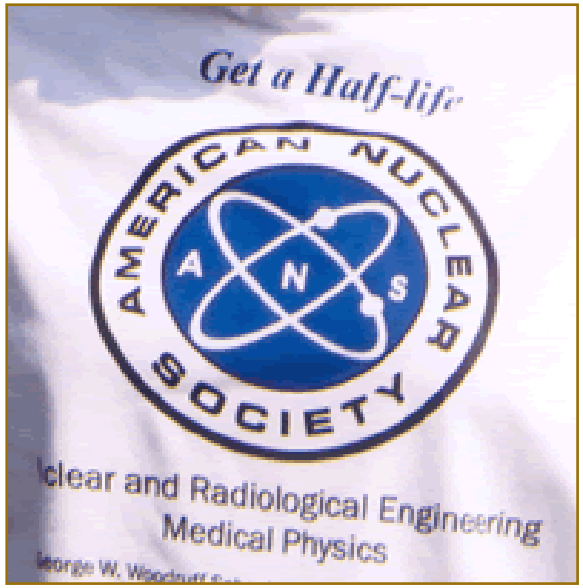


Fuel cells, batteries



New solar cell technology





New materials for the rigors of producing, shielding nuclear energy.

Other research thrusts

High performance computing

Robotics

Disaster recovery

Global Safe Water

Expanding economic impact

- Annual economic impact: $4 billion
- 2005: Awarded 43 patents
  - Top 10 among national research universities
  - No. 3 in Georgia behind GE Energy, BellSouth

Technology Enterprise Park

- Spinning off start-up companies:
  - 1987-1995: 8 companies
  - 1995-2000: 29 companies
  - 2000-2005: 47 companies

Advanced Technology Development Center

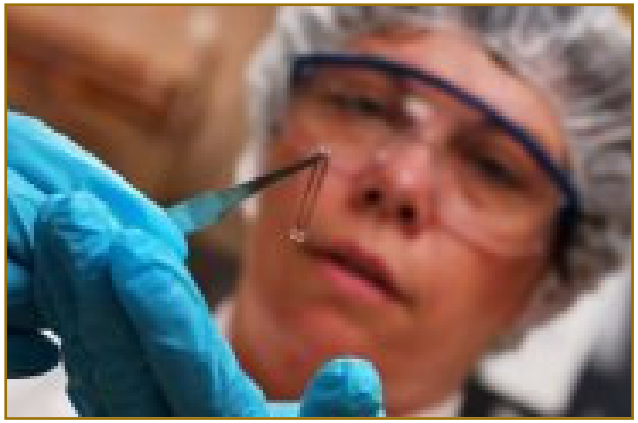
Global leader in biotech transfer

- No. 4 in start-up companies
- No. 8 in patents filed
- No. 11 in technology transfer

Mind to Market: A Global Analysis of University Biotechnology Transfer and Commercialization

A study by the Milken Institute

Orthonics



CardioMEMS

Expanding Georgia's economic reach

France

Singapore

Ireland

Shanghai

Engaged through GRA

- 19 GRA Endowed Scholars at Georgia Tech
- Support for national centers of excellence:
  - Center for the Engineering of Living Tissues
  - Chip Packaging Research Center
  - Nanomedicine Center for DNA Repair (GT, Emory, MCG)
- Examples of other efforts at Georgia Tech:
  - Center for the Study of Systems Biology
  - Georgia Electronic Design Center
  - National LambdaRail, Inc.

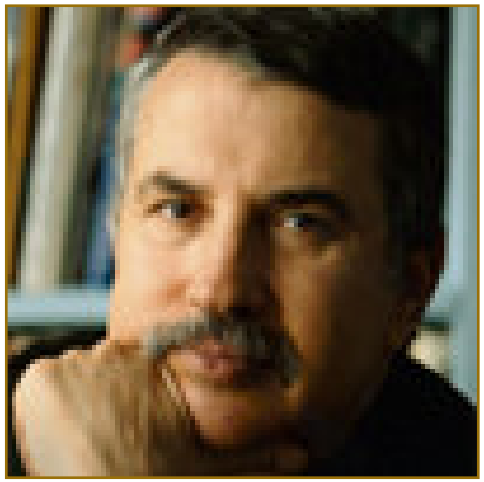
National rankings

Academic

- Top 10 public university
- Top 5 engineering school
- Top 10: all engineering disciplines
- No. 3 among public universities in % of National Merit Scholars
- No. 2 among all universities in NSF CAREER Awards
- Top 5 in nanomedicine
- Top 12 best value in public education

Other

- Best university-based business incubator
- Top 12 academic places to work
- Top 5 public university in alumni giving
- Largest voluntary co-op program
- Best campus rec center
- No. 1 women's tennis team



Tech has the “right stuff”

“What the Georgia Tech model recognizes is that the world is increasingly going to be operating off of the flat-world platform, with its tools for all kinds of horizontal collaboration.”

Thomas L. Friedman
The World is Flat